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POMOLOGICAL.

With no disposition to criticise, or presumption to knowledge, I unhesitatingly pronounce the whole of pomological literature, at this present time, completely incomplete, or, in other and more common words, a "perfect muddle." We have volume after volume, enumerative and descriptive of numberless varieties, and yet the most perfect pomologist is unable to identify any variety, with which he is not familiar, from any description or test, classification or systematic arrangement published. Over two thousand names are applied as belonging to distinct varieties of apples; the subject is multiplied in each new edition or book published, but as I believe really without any definite knowledge on the part of the describer as to whether the variety he describes is a new and distinct sort, or one already known some two hundred years ago.

Since the publication of Coxe's work in 1817, no one book has so completely met the subject of varieties with tests and illustrations enabling the uninitiated to identify and select, as did that publication. Kenrick was but a rehash of English works, with little or no knowledge personally of varieties, and with no disposition whatever to step out of an old beaten track. The little work of Manning, good in its way, yet served as a trifle only beyond a catalogue. Downing's was an advance, but not what that author was capable of or would have performed had he lived twenty years longer. Nevertheless it was an advance; for while the author saw at a glance the utter uselessness of the old German classifications to the general reader, or even toward enabling pomologists to identify sorts, he yet felt that a certain credit should be given to those who had labored before him, and that as an aid greater than all others in the identification, local names or synonyms were essential. Thomas' work was, strictly, no fruit book. It combined a few sorts of fruits with a great deal of condensed practical matter relative to the profit and values and modes of fruit-growing, and was in that respect a really valuable work. Barry's, again, was no fruit book in itself, so far as varieties, nomenclature, or identification were concerned, for no attempt was made to classify, arrange, or describe fruits beyond what had already been done; but it was, and is to this day, an exceedingly valuable work, covering a field of culture in nursery and systematic training in orchard which the people want, and can not find outside of it.

Elliott's book was arranged on an entire new order, viz., a classification of varieties as to their relative values; and because of its author assuming to place many varieties in his third, or unworthy, class, which were then being popularly grown, and giving to the front rank some varieties not generally known, his work was discountenanced by all tree growers and dealers, because it affected their immediate interests. As a work enumerative and descriptive of fruits, however, it was in advance of any previous one, and to this day covers many varieties not found in other works.

Coles' Fruit Book followed as it were inside of an old track, adapting itself to a few localities in New England, but covering no ground which was not covered; or embracing items of instruction not to be found in any yearly volume of a good horticultural journal.

Hooper's book is the veriest compilation ever foisted on a public anxious for information, and ready and willing to pay therefor.

Warder has issued a work on apples alone, and has adopted, with some changes, pretty much the mysticism of the old German authors in his classification, abandoning most, or giving very few, of the local names.

White's "Gardening for the South," without any attempt at originality in its order, sought only to enumerate and describe, according to precedent, such varieties as were valuable there, and in that gave us our first knowledge of many Southern fruits which otherwise would to this day have been unknown.

So much for the fruit books; knowledge obtained from which is about like that of doctrines of religion—all based on a good cause, but varying according as man's fancy, knowledge, or skill may direct, but save in the main object at end, with no definite unity.

To what use, I ask, is all this compilation without unity of system? Is there no definite rule which shall govern? Is there no system of arrangement, description, classification, etc., which is superior and shall rule? Is there no guide for the introduction or raising of fruits beyond the fancy or knowledge of him who has seen or grown them? Our pomologists and societies are allowing descriptions of fruits to appear upon their records from year to year, ninety-five out of every hundred of which are of no value as compared with the old known sorts. Ought this to be? Ought not our leading men and our pomological societies, when a fruit is brought before them, to say at once, without fear or favor, their actual judgment of such fruit; and if it is only moderately good, although highly extolled by its originator or some one who has trees or plants to sell, say that it should at once go on record and be there killed? I hope we shall some time arrive at a point when we shall have a book giving us only full and perfect descriptions of such fruits as the author in honesty and truth believes are really valuable, while of those only "good," or even "very good," he will, while enumerating and describing, condense into as few words as possible, and yet give us the general contour of the fruit, retaining also all the local names or synonyms.

A. Thorn.

Chenango Strawberry.—Specimens of the Chenango Strawberry apple have been sent us from several sources. It is an apple of more delicacy than the Late or Autumn Strawberry, more conical in form, and often, if not always, angular, or having its sides unequal. Color, a clear lemon yellow ground, mostly overspread with a bright rich clear red and with scattered yellow dots. We regard this as one of the very best early autumn or late summer varieties.

MOUNT VERNON PEAR.

A CHANCE seedling which originated on the grounds of Honorable Samuel Walker, of Roxbury, Mass., and by him named Mt. Vernon. Specimens from which these outlines and descriptions were made came from W. S. Little, Esq., Rochester, N. Y.

Tree, vigorous, an early bearer; wood, resembling Flemish Beauty in color; buds, more prominent, and forming a symmetrical tree, producing its fruit in clusters.

Fruit, generally of full medium size, form varying, but as a rule resembling our largest outline, being globular, pyriform, and oblique; skin, smooth, but not glossy smooth; color, a rich cinnamon russet brown; stem, short, enlarged, and wrinkled at junction with fruit. Occasional specimens are nearly globular, having the stem set with a slight depression. Calyx, small, with short open segments; some specimens have but a trace of calyx; basin, smooth, even, varying in depth; flesh, yellowish, granulated, juicy, crisp, melting, sweet cinnamon aroma, almost if not quite "*best.*" Season, December.

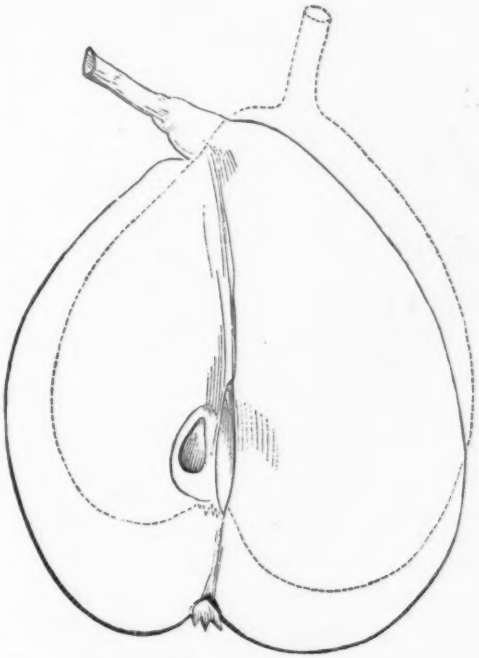

FIG. 31.—*Mount Vernon Pear.*

This is not strictly a new pear to the public, although it has never been disseminated. It has been before the Massachusetts Horticultural Society from time to time, and received favor.

HINE GRAPE.

BY F. R. ELLIOTT.

THIS is a new variety sent me by Charles Carpenter, Esq., of Kelley Island, Ohio. It was shown at the Ohio State Fair, Oct., 1867, by D. C. Richmond, Esq., as a seedling; but the fruit was from a vine grown by Mr. Carpenter. The history is given as follows by our correspondent, Jason Brown, Esq., of Put-in-Bay, Ohio.

"PUT-IN-BAY, *Nov. 25th*, '67.

"F. R. ELLIOTT, ESQ.—*Dear Sir:* The Hine grape is a seedling raised by me in 1852, the fruit of which was exhibited at the State Fair by Mr. Richmond. Mr. C. Carpenter, of Kelley's Island, tells me it took the first premium as an unnamed seedling. Perhaps the grape will not deserve a name. I have never exhibited this grape at any fair or fruit show, and did not know that it would be at the State Fair till Mr. Carpenter told me a few days since. I will give a short history of it, to prevent mistakes. In the fall of 1851 I noticed in the vineyard of Mr. Daniel Hine, of Talmadge, Summit Co., two bunches of unripe [in September] Catawba and Isabella grapes growing so closely together as to make it quite probable that by sowing the seed I might get a cross of the two. I told Mr. Hine that if he would save me the seed, I would give the best seedling I got from them, his name. The grape you saw at the State Fair is the best one I raised, and was named Hine. About four years ago I gave Mr. Carpenter a few cuttings of the Hine for a few cuttings of his seedlings. I have kept still about this grape because I am not willing that any new variety of fruit I may get from seed should go out, without being fairly tested in different localities, and its *faults* fairly shown up as well as its good qualities. I am somewhat partial to this seedling, and have a high opinion of it. The fruit began to color and was sweet before the Delaware this season. Here the wood ripens well, and is hardy and healthy so far with me. If the Hind grape will not *stand* upon its own merits, I want it to *fall*. Very respectfully yours,

"JASON BROWN."

Bunch, large, compact, somewhat shouldered; berries, medium, irregular in size, round, very dark rich claret brown, with a purplish bloom; skin, of medium thickness, not harsh; flesh, juicy, rich, sweet, and almost without pulp, very delicate, slightly of Catawba character in richness, but not with as much or perhaps any of its aroma; seeds, oval, pointed, flattened on one side, two in a berry; wood, of medium size; canes, reddish brown, very short-jointed; buds, prominent; leaf, large, thick, whitish underneath, light rich green above.

The promise of this grape is very great: but of course it must be grown and ripened in different locations and soils before the public can have any confidence in it as a variety for general cultivation.

SWEET BELLEFLEUR.—We have received samples of this fine apple from central Ohio. It was first described, and its cultivation advised, by that good pomologist and friend to man A. H. Ernst, deceased. The fruit is large, much resembling in outward appearance the old yellow Bellefleur, but the flesh is pleasant, sweet, juicy, and rich.

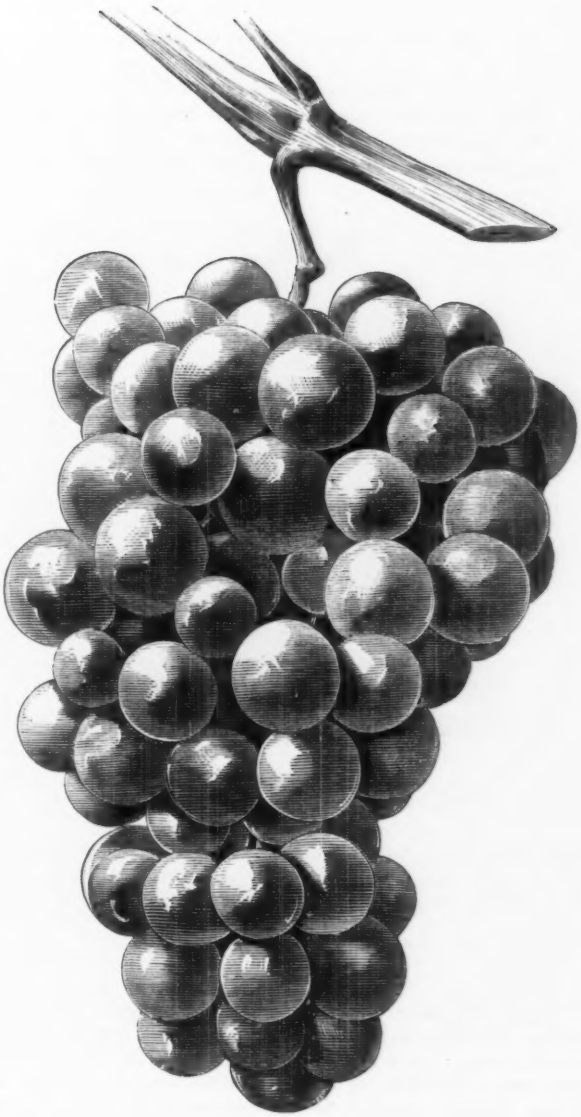

FIG. 32.—*The Hine Grape.*

A RARE BUT BEAUTIFUL PINE.

In the grounds of Joseph Perkins, Esq., of Cleveland, Ohio, is a beautiful pine, of which the accompanying is a pretty good illustration on a small scale. The name under which it was received has been lost, and I am unable to say clearly what it is, but believe it the *pinus bruttia*, or Calabrian pine. It is certainly a very beautiful

Fig. 33.—*A Rare but Beautiful Pine.*

pine, with long, wavy leaves, longer than the Corsican or *larico*, and of a green, brighter and more yellowish, like the Austrian (*Austriaca*). The tree stands in low ground, fully exposed, and has proved perfectly hardy. F. R. E.

Lilies.—We notice our dealers in these bulbs are offering them at prices comparatively cheap with former years, and we again say to our readers, do not fail of having a bed of lilies. Make the ground rich with well-rotted manure, and at least two feet deep; then, when planting the bulb, surround it with clean sand an inch thick, below and above, and over it good strong soil, free from any undecomposed manure. Animal or vegetable matter, in an undecomposed state, when in immediate connection with the bulb, induces rot and decay.

JAPAN PEAR.

This is a singular fruit, of no value as a dessert sort, but exceedingly valuable as a cooking pear, having very much of a quince-like flavor. It can be kept long into winter, with no more trouble than potatoes; and like long-keeping winter apples, brought forward whenever a dish of fresh stewed pear fruit is desired. For preserving, it is also valuable on account of its highly aromatic character, which can hardly be submerged, even by use of a large amount of sugar.

Its origin was by Gideon Ross, of Westfield, N. J., from seeds found in the trunk

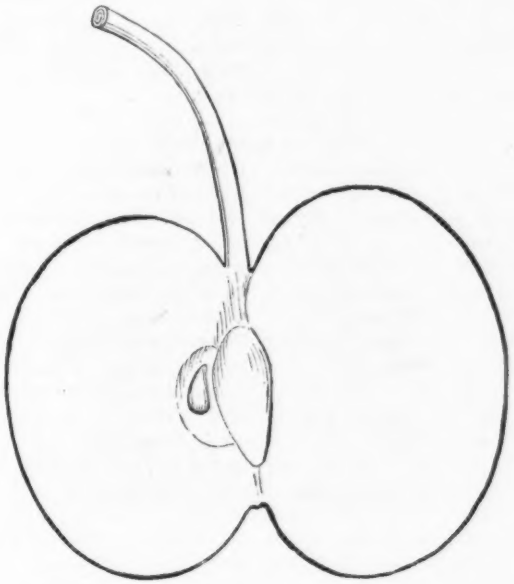

Fig. 34.—*Japan Pear.*

of a nephew who died on his way home from Japan. It bears early and abundantly, and the tree is a strong grower, with broad, nearly heart-shaped, foliage.

Description.—Fruit, medium, roundish oblate; skin, quite rough; color, reddish russet yellow, with large light colored specks; stalk, long and stout; cavity, open, deep; calyx, only marked; basin, open, broad, deep; flesh, coarse, gritty, with consistence much like a quince and somewhat of its aroma; core, with an open center. October to February.

Best Six Apples for Iowa.—Jno. Edgerton, of Coal Creek, Iowa, says: "The best six varieties of winter apples for that section are, Willow Twig, Ben Davis, Rawles' Janet, Jonathan, Domine, and Winesap."

DON'T MISTAKE THE CAUSES.

BY PETER HENDERSON.

Many young gardeners and amateurs flounder befogged, attributing failure of crops in the garden, or want of health of plants in the green-house, to bad seeds, uncongenial soil, or fertilizers, when it is much oftener the case that the cause is of a totally different nature, and entirely within their control. A temperature at which seeds are sown and plants grown must be congenial to the nature of the variety, else success can not follow. In a temperature at which a portulacca will vigorously germinate, a pansy seed would lie dormant, or at least show a sickly existence, and *vice versa*. Nearly half of the Lima beans sown annually, perish by being sown from two to three weeks too early, by the impatience of our embryo horticulturists. On the other hand, the colder blooded carrot or turnip seed all but refuse to germinate in the sultry days of July. Seeds of calceolarias, cinerarias, Chinese primroses, and pansies will germinate more freely and make better plants by delaying the sowing until the middle of September than if sown earlier. Many failures are attributable to want of knowledge of this fact, and without question laid to the charge of the seedsman.

The same necessity of accommodating the temperature to the nature of a matured plant exists even to a greater extent than it does in the seed; and one of the main causes of want of success in cultivating plants under glass is a want of knowledge, or carelessness in keeping a temperature unsuited to the growth of the plants. In ordinary green-house collections the fault is oftener in the temperature being kept too high than too low, for it is much easier —requiring far less watchfulness by the person in charge to keep up a high temperature. The injury done by this is gradual and will not, like the action of frost on the plants, show in the morning. In consequence of this, we often see the temperature of green-houses containing camellias, azaleas, pelargoniums, carnations, etc., etc., sweltering under a continued night temperature of 60° or 65°, when their nature demanded twenty degrees lower.

It is true, we too often see collections of hot-house and green-house plants intermingled, and attempts made to grow them, which of necessity result in failure to one or other. The temperature to grow in healthy condition coleus, bouvardia, or poinsettia (hot-house plants) would not be likely to continue long in a healthy state verbenas, carnations, or geraniums. The same rules follow as to the propagating-house, showing the necessity, even in a greater degree, of the strict requirements of their different natures; coleus, bouvardia, begonia, and lantana root in a bottom heat of 75°, with atmospheric temperature of 65°, in ten days; at twenty degrees lower they will not root at all, and will perish. And although cuttings of plants of a more hardy nature will root in some conditions of growth at this temperature, yet we prefer, to insure plants of vigorous health, verbenas, carnations, geraniums, roses, etc., to be rooted in a temperature at least fifteen degrees lower both in the bottom heat and temperature of the house.

The subject is one embracing so many varieties and different conditions of organism at the different seasons of growth, that it is impossible to convey to the unexperienced what these varieties and conditions are; but the object of this article is to impress upon your young or inexperienced readers what I have long believed to be an important truth—that the supplying

the proper conditions of temperature to plants under glass, according to their different natures and conditions, has as much, or more, to do with their welfare than any other cause; and that often when ascribing the unhealthy state of a plant to uncongenial soil, or defective drainage, or the "damping off" of some favorite cutting to the way it was cut or the sand it was put in, the true and sole cause was nothing more than condemning them to an atmosphere uncongenial to their nature.

South Bergen, N. J., *Feb.* 10, 1868.

BEURRE D'AVOINE.

Fruit: size, medium; color, pale rich yellow with fine dull russet dots and rough fine russet marblings, especially around the stem and calyx; stem, varying in length, usually, as in our drawing, planted in a cavity, narrow and furrowed; flesh, yellowish white, fine grained, juicy, melting almost buttery, with a sweet vinous aroma

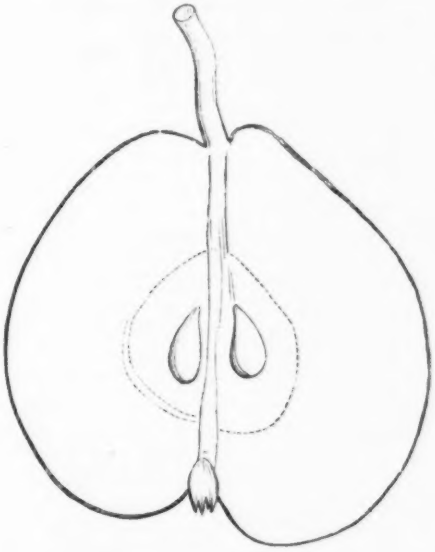

Fig. 35.—*Beurre D'Avoine.*

and taste; calyx, with long segment nearly closed; basin, narrow, rather deep, and with a few broad furrows; core, medium; seeds, large obovate sharply acute pyriform. Season, November to January or early winter.

Thin out the old wood of currant and gooseberry bushes, and thus improve the size and quality of the fruit in future seasons.

PROPAGATING PLANTS.

BY A. S. FULLER.

INFLUENCE OF STOCK ON THE GRAFT.

THAT the stock upon which a graft is inserted has an influence upon its future growth, is well known. If it were not so, then grafting, budding, and similar modes of propagating plants would not have been discovered, nor the beneficial results of these operations been enjoyed by mankind. But merely supporting the graft or furnishing it with the required amount of sustenance, does not convey the full meaning of the term *influence* as generally understood in connection with this subject.

The stock not only acts as a medium through which the graft obtains sustenance from the earth, but it in a great measure imparts its own characteristics to it; and it is thus we change the giant into a dwarf, the slow growing plant into a rapid, and many other variations from the natural habits of plants, simply through the influence of the stock on the graft.

We may not be able in every instance to determine the true cause of certain variations which may appear to be antagonistic with what we call natural laws, still, for all practical purposes, our knowledge of this subject is sufficient to enable us in many instances to so change natural products that their value to us is increased many, many fold.

The common method of producing dwarf trees is one of the most familiar instances of the influence of the stock on the graft. But there is, however, a too general inclination on the part of the public to misapply the term dwarf, as many suppose that it is nearly, if not quite, synonymous with debility or stunted growth. This idea is an erroneous conclusion, for in many instances what are called dwarf trees are equal to and often more vigorous than standards. For instance, we will select two seedling stocks, one shall be the Mahaleb Cherry and the other the Mazzard; both shall be of the same size and of equal vigor. Upon these we will insert buds of the May Duke Cherry, or any other variety. Now, the chances are in favor of the bud on the Mahaleb stock making the most rapid growth for the first one or two years, and still the Mahaleb is considered to be one of the best stocks on which to dwarf the cherry. Now, the Mahaleb stock does not lessen the vigor of the tree, but merely imparts to the graft its peculiar habit of growing and spreading, and we are obliged to allow and assist the tree to grow in this form, or it will surely become feeble and perish. The bud inserted upon the Mazzard stock will shoot up into a tree, assuming its natural form, but the influence of the stock will be to make it grow pyramidal and quite tall, because that is the natural habit of the Mazzard Cherry.

From my own experience, I conclude the same rule holds good with many other dwarf stocks, and I have, as a general thing, secured a larger growth of the pear for the first two or three years, and even longer with proper care, on the quince than upon the pear stock. The influence of these stocks is shown by imparting their peculiar form of growth to the graft, early fruiting, etc., more than checking their vigor. By these remarks, we wish to be understood as only referring to stocks upon which the graft readily unites. If we undertake to trim up our dwarf trees and make standards of them, we soon discover our mistake; and I once knew of an instance where ten thousand cherry-trees on Mahaleb stocks were destroyed in endeavoring to change them from dwarfs into standards. In this instance, the first sign of failure appear-

ed upon the upper portion of the stem and among the branches in the form of a species of fungus or blight, which killed the upper portion of the tree, and at the same time young, vigorous branches were produced in abundance on the lower portion of the stem; and thus the tree assumed its natural low growing or dwarfish habit.

In some instances we use stocks merely as a temporary support to the graft, not expecting that a permanent union will be formed, as in grafting the tree pæonia upon the herbaceous, or the stem of one dahlia upon the tubers of another. But with trees we usually expect permanency, and therefore select stocks that shall not only support the graft, but develop those particular characteristics which are most desired.

The chief point of influence of the stock on the graft may be stated as follows: 1st. The stock gathers the crude materials for the support of the graft from the soil, and in doing so it may furnish it in such quantities as to produce rapid growth, or the reverse.

2d. Its tendency is to impart its own habit of growth to the graft. Early or late maturity and productiveness being characteristics of different varieties, the stock will therefore hasten or delay fruiting.

3d. One species of stock will extract from the soil the peculiar ingredients which are necessary to support the graft, while another will not, consequently a variety of species of fruit may fail upon one stock and succeed upon another in the same soil and locality.

4th. The hardiness of a tree is but slightly changed by the stock, except as its growth is influenced, to mature early or late in the season.

5th. The quality of the fruit is occasionally influenced by the stock; but the true cause of this is not yet sufficiently understood to allow of positive rules being given by which it may be avoided. Size of the fruit is also considerably changed by the use of different stocks. I know of two Bartlett pear-trees of the same age and standing side by side, and both apparently of equal vigor, still for ten years one has produced very large fruit and the other small. The number of specimens upon each tree being reduced to an equal number, the difference in size was still the same. With such examples before us we can not but conclude that the stock in some instances does exert sufficient influence to change the size of the fruit.

6th. The stock will not only impart vigor to the grafts, but will also transmit diseases. It is therefore just as important to avoid the one as to endeavor to secure the other.

INFLUENCE OF GRAFT ON STOCK.

The influence of the graft on the stock is seldom referred to in our horticultural works.

Downing says: "The influence of the graft on the stock seems scarcely to extend beyond the power of communicating disease." But if we have discovered this much, it proves that there is an influence, and if it is sufficiently potent to "communicate disease," then it should also be powerful enough to impart other characteristics as well. Mr. J. J. Thomas, in his "American Fruit Culturist," edition of 1849, makes a few remarks upon this point, which I think are worthy of notice. He says: "The extension of the wood of the stock by successive depositions from the leaves of the graft and through the cellular system of the bark, so as to preserve the strict specific identity of the wood of the former, is familiar to every practical cultivator. The same seedling cherry stocks, grafted with sorts of different degrees of vigor, soon vary in amount and size of the fibrous roots. Trees of the Imperial Gage and Jefferson Plum, a few feet in height, when budded on the wild plum, were found to have only half the amount of roots possessed by the unbudded stock of the same age."

Every nurseryman must have observed

that some varieties of the pear have far more fibrous roots than others. So marked is the difference, that the common laborers in the nursery soon learn to distinguish them, and will proceed quite differently in digging the trees of each variety, knowing that one has few long, naked roots, while others have short and numerous fibrous ones. These various forms of roots can not be satisfactorily accounted for in any other way but to ascribe the cause to the influence of the graft. If we take a seedling apple-tree of one or two years old and divide the root into two sections, upon one of which we insert a cion of the Newtown Pippin and on the other one of the Northern Spy, and then plant them both in exactly the same soil and cultivate alike, when, after three or four years, we dig them up, the roots will have a decidedly different appearance. Still, with all the influence which the cion has had upon the roots, changing their appearance and form of growth, if cuttings are taken from these roots and allowed to grow up into trees and bear fruit, they will produce the same sort in both instances. The vigorous growth of root depends as much upon the stems and branches as the latter does upon the root. If we graft a weak-growing variety upon a strong, vigorous one, there is no certainty that the stock will be able to overpower the inherent feebleness of the cion and keep it growing vigorously for any considerable length of time. The cause of this, in many instances, is probably owing to the fact, that the leaves on the graft are not capable of assimilating the sap as rapidly as is requisite for the health and growth of the entire plant. Roots gather the crude materials which make up the bulk of the plant from the soil, but they can not grow unless the leaves return to them the requisite materials for their extension. Now, if the leaves are not capable of assimilating all the materials that the roots have the power of absorbing from the soil, it must be apparent that there will be at least a partial check to the circulation of sap, consequently a diminution of growth. A few years since I had an opportunity of witnessing a singular effect of leaves on growth. An old Easter Beurre pear had been allowed to over-bear, and, consequently, had become very much enfeebled in growth, so much so that it did not make an inch of growth upon any one of its branches. One of the small branches was cut off and a cion from a Vicar of Winkfield placed upon it. The graft made a growth of two feet the first season; the next season the graft not only continued its rapid growth, but the entire tree appeared to revive and send out new and vigorous shoots. My theory in this case may not be a correct one, but I believe that the cause of this change in the old tree was owing to the demand which the new graft made upon the roots for plant-food; they, in return, received materials for their extension. The supply which was gathered and sent forward not being all absorbed by the graft, was forced into the old branches, increasing the size of their leaves, thereby causing a reaction in the entire tree. Healthy leaves indicate healthy growth, and new leaves cause the production of new roots, and these in return furnish the materials for continued growth, and thus a reciprocal action is constantly going on between root and branches.

Peach on Plum.—Wherever the peach does not succeed well, planted upon its roots, because of the soil being too stiff, clayey, or wet, it will be found that if the peach be budded on the plum it will thrive well, and give good crops of fruit, and, at the same time, give to the tree more hardihood to endure extreme changes of temperature.

SEEDLING DAHLIAS.

THE growing of dahlias from seed is considered usually very precarious, as regards the product of well-formed compact flowers. I have known a grower with twenty-five hundred seedlings obtain but one single flower of excellence; but the result I am now about to relate is of a very different character. In the fall of 1866 Mrs. Oliver Alger, Cleveland, Ohio, selected seed with great care—she being a lover and amateur grower of flowers—from some of the best dahlias in her garden. Early in the spring of '67 these seeds were sown in pots in the hot-bed frame, and about the

FIG. 35.—*Seedling Dahlia.*

1st of June transplanted to the open ground. The result was, that when they came to flower, she had but two imperfect flowers, or, in other words, but two of the plants gave blooms that would not command the eye of a florist as readily as two thirds of the varieties under name and cultivation. The variety of colors was from a dark rich maroon red to a light sulphur yellow, and the drawing I give is not one of the best, nor the poorest, but an average of the perfection and form which the collection embraced. F. R. E.

PROPAGATE cuttings of verbenas, petunias, carnations, and other plants wanted for bedding out in the garden. Cuttings put in now will make fine strong plants by the time for planting out.

THE CARBOU STIFFENER.

BY E. FERRAND, DETROIT, MICHIGAN.

READING in the February number of the HORTICULTURIST the article on Stretching Wires, by "Horticola," reminded me that in a former number, speaking of dwarf apple-trees grown as edging, I promised to describe an instrument, then newly invented, in use in France, for stiffening

FIG. 36.

wire trellises. The accompanying drawing gives a correct idea of this useful thing, though it is generally three times the size here represented. It consists of a small strip of iron a 10th of an inch thick, ¾ inch wide, to one end of which—a little wider than the rest—is fastened a rivet (A), with its head ¾ inch in diameter; said rivet is pierced through by a hole, into which the wire is passed. The wire being fastened at both ends, all it requires to tighten it is to wind the stiffener around until the wire is sufficiently stiff, and then you make the stiffener fast by just inserting the wire into that little notch (B) at the small end of the tightener, which is bent to a straight angle, the wire itself acting as a spring. It is very easy when the wire becomes slack by the effect of heat or otherwise to give the tightener half a turn, which is all that is necessary. The above instrument was invented by Mr. Carbou, a French gardener, and is very simple and cheap, and never gets out of order.

It is manufactured in France at prices varying from $3 to $10 per hundred, according to size. I hope somebody will manufacture it for us here.

THEORY, PRACTICE, SCIENCE.

BY JOHN ELLIS.

WHEN a scientific mind announces a new discovery and affirms it a truth, it is generally because of results eliminated in accordance with laws that prove it to be so through the direct application of a test. Astronomical theory taught, and is teaching, that this earth, now partially solid, was once in so fine an ethereal state that man's senses (if he then existed) could not have revealed it to him; but through the process of cooling and condensation rock and earth ultimately were formed. The chemist says that if this theory be a truth, I can and will prove or disprove it; so he puts the rock into the retort, and behold he finds nothing but gases! How important it is that all theories should be reduced to practice; but how much easier it is to say IMPOSSIBLE than it is to *reconstruct* our own dear cherished theories in conformity with practical science! "We have taught," says the *Gardener's Monthly*, "that the roots of a vine never extend beyond the distance its branches are allowed to go;" "that when we cut away the vine, the roots die away in proportion;" or, as we suppose the writer intended to have said, according to the cutting away of the branches or wood, so in proportion do the roots of the vine die. Reader, is

this a truth or a fallacy? Have you any practical experience on this direct question? Did you ever *think* about this? Did you ever cut a plant back, and if so, for what purpose? You certainly have planted vines? "Yes." "And cut them back either before or after that operation. Well, and what did you cut them back for? Why, to strengthen the young plant; and if all the wood was cut away excepting perhaps a base bud or two, you have found the young plant was still more benefited?" "Most certainly." "Now, what is the science or philosophy of this operation? Why, this: that the young roots are not strong nor numerous enough to extract from mother earth fluid matter sufficient to carry on and upward into the woody tissue of the young vine to sustain and develop the foliage as fast as the leaves can convert it into sap; or, in other words, the process of elaboration or chemical transmutation in foliage action is too absorbing for the supply from the roots, and consequently a partial vacuum is formed between leaves and roots, and the consequence is stagnation in the growth. Then, as you 'cut away the vine,' did you find the 'roots die in proportion?'" "Certainly *not;* but, on the contrary, they increased a hundred-fold." "Very well; then we shall call this practical science of the right kind. Now, from this small portion of practical knowledge, you with your young vines must certainly have gained some practical experience?" "Yes." "Now, in what way has this much of experience benefited you with your young vines in the next season?" "Ah, sir, much. My vines the past season made a fine growth; they grew clean away up to the tops of the rafters, which are eighteen feet long; and in the month of November (not September) I cut them down to less than one third of their whole length." "But do you not think that you did very wrong, knowing that it has been taught that in proportion as the wood is cut away, so in proportion the poor roots die away?" "If fine wood, nearly double the strength it was the past season, with some splendid bunches of grapes, is proof that the roots really did die, why, then, all I want is just the same kind of proof as long as ever I shall grow a vine." "Then am I to infer that you annually prune away the wood?" "Most distinctly." "But you can not 'prune away' when your vines have reached the top of the rafter, or you would not fruit *all the way up?*" "Ah! that is just where the secret lies, and that is just where and when your roots begin to die. Cease to have wood to 'prune away,' and just in the proportion as you *don't* 'prune away' plenty of wood, so in that proportion your vine roots most assuredly will die." "But *how* do you manage to have plenty of wood to 'prune away?'" "Well, sir, this is hardly fair—in fact, it is quite a secret; indeed, I am just thinking about taking out a patent for the process; but then, the more we talk about an invention we are about to get patented, the greater is the proof established by having a number of witnesses who can vouch in behalf of the originator, should the case be contested. So I will tell you how always to have plenty of wood to cut away. Never fruit your vines more than two thirds their length, and cut away the wood from that given point every season." "And the poor little roots won't really die *one third*, as this is the proportion cut away of the wood?" "Not a bit of it." "Nor the new young roots go precisely in the track where the other old roots have traveled and absorbed all the nourishing elements out of the soil?" "You rather surprise me with this query, as I can not see by what law new roots are constrained to pass through an identical portion of soil of which the older roots have previously absorbed all its constituent elements of plant-food. Roots of plants generally travel to where they are attracted, and the elements of soil thus magnetized possess the necessary food constituents." "But why do you speak of soils being 'magnetizing' or

'attractive?'" "Well, then, perhaps the term *affinity* may suit you better; but, to me, *affinity* seems to belong to a low order of intelligence; for this *affinity* certainly manifests traits in its character of *like* and *dis*-liking things. Kerosene oil will instantly kill meally bug, but the oil alone is too strong for most mealy-bug-plants, and we can not weaken it with water because the kerosene *don't like* the water; but if we add some soap, we then throw dust into the eyes of kerosene, and then, being blinded, it can not tell one from the other. We cheat him into a matrimonial alliance for our own benefit. A great many things are done this way, using soap and coal dust.

"There stands a lophospermum, you see, growing in *that* pot. Two feet from it, you will observe, stands a small wooden water-tank, kept full for ordinary use. Now, observe the roots of that plant, and you see they have come through the hole in the bottom of the pot, and have traveled in a direct line *two feet*, and reached the tank of water, pierced through it where the planks are nailed together, and have gained full possession of the water! This is an evidence of attraction or the magnetic power of the soil,—the one positive, the other negative, its polarity mutably conditioned to meet the condition of and reverse the aqueous superfluity of either soil or roots. Now, 'exhausted' soils seem to imply a soil in *statu quo;* but this is not the case, for there is not one moment in the life of soils but what they are continually undergoing chemical transmutations, and streaming forth vegetable life-constituents in a wonderful manner and to a most wonderful extent, and these transmutations are more multitudinous when in conjunction with root action; for it is then that the vegetable and mineral substances in solution through heat, carbonic acid, etc., yield to the roots the greatest amount of food, as in like manner does the root yield to the soil and the latter to the atmosphere, under a *low* temperature, the very constituents of its vegetable organism in icy crystals and in perfect representation of that identity from whence evolved.

"Now, the greater the activity of the roots, the greater and quicker is the circulation of the fluids. Activity of root action is dependent on the leaves being largely and fully developed, and these again are dependent on the amount of sap fluid being carried up and through the plant organism, and *above* its fruiting members in the form of, first, large sappy growth, and secondly, the solidification of every molecular particle throughout all the ramifications of the plant organism, *fruit* and all." "Pray, through what agency do you attribute the perfecting of the vine's system and its fruit? is it not 'healthy leaves' rather than 'sun-light?'" "The theorist who asserts that the *ripening* of the vine's fruit is effected by 'healthy leaves,' and *not* by 'sun-light,' can not prove any such assertion. Let the dogma be issued forth, if you please, from the highest throne of botanical science; for with equal propriety may the animal physiologist assert that the human system is developed and perfected through the agency of the stomach, and *not* through the air we breathe. Where would 'healthy leaves' come from were it not for the direct rays of sun-light? No such leaves would ever be found, and we could as reasonably expect to find them in a darkened cellar as in a glass structure, if such statements as the above were correct, or, indeed, even likely to be logically correct. The student of such a theory would require his intellect opened somewhat by a reasonable argument, *à priori* and *à posteriori*."

There are vines in Texas, Florida, etc., where a system of pruning is adopted of cutting back the annual growth to within a few buds of where the growth was projected, and the practice continued for so many years that the trunk of the vine is often over three feet in diameter. If the theory is correct, that "in proportion as we cut away the vine, the roots die away,"

the plants in question could not have lived long enough to have formed such immense trunks. Again, what is the experience of all practical nurserymen or fruit-tree growers? Why, that when a plant has become stunted in growth, it is cut clean back, which in almost all cases renews the plant's energy.

In the section of country where we reside, the yellow locust abounds most plentifully. After the trees have well developed themselves into pretty good timber, the tops will die off, and the tree would gradually die altogether but for the preventive put into practice, which is, to saw off the heads of the main branches, when the trees shoot out again into luxurious growth, and continue to do so for a number of years; and we have seen the "rings" in a transverse section of the wood, which plainly demonstrate the time when the lopping off the branches was effected, by observing the great difference in the diametrical proportions of the rings. Such evidence as this certainly does not prove that cutting back the wood destroys the roots. Nature prunes and shortens back the branches of vines. Look at the grape-vine in a state of nature, and how do we find it? thus: the ends of the annual growths not being perfectly ripened are destroyed by frost to a certain extent *backward*, or to a point where the wood has been sufficiently ripened. Then, if we watch this piece of wood that has been so killed at the end, we also find that this same branch, in the season of growth, does not burst *all* its buds, but that a number of them near the base of the branch do not burst at all. This is the condition of the vine in a state of nature; and from the facts demonstrated we establish a system of pruning as nearly allied to nature as possible, but in which system we try, and do obviate what may be termed the *objectionable* in the *natural*, *i. e.*, the dying away of the ends of shoots and the non-bursting of the whole of the buds which are left. When considering the possibility of vine roots not being able to reach out into the soil to a greater extent than its branches are grown inside a vinery, we are reminded of an instance of a very remarkable kind in England, the seat of Robert Vernon, Esq., Wantage, in Berkshire, and with whom we lived as gardener. In those gardens was a range of graperies, a large culinary garden in front with a gentle slope to the south, the foot of which resting at the edge of an extensive artificial lake. All parts of the garden that were not in crops were trenched every fall two feet deep, and in two years, by the alteration of the winter crops, the whole garden was put through the trenching operation. In the vine borders no roots were found, nor indeed were any ever recognized, as far as we were cognizant, in the garden soil: but on looking at the edge of the water of the lake could be seen large *bunches* of vine roots, clustered as large as bushel baskets. These roots had traveled from the vineries, *below* the trenched ground of the garden and down into the water, a distance of *over one hundred yards!* The length of rafter these vines were trained to was TWENTY FEET!

SUNNY DELL VINERIES, WHITE PLAINS.

NEW SEEDLING PEARS.—Thomas H. Genin, St. Clairsville, O., has grown quite a number of seedling pears from seeds of the Seckel. We have been favored with samples of some of them the past fall, and made drawings and descriptions which, perhaps, we shall hereafter publish. Several of them are of really high character in quality, much resembling their parent, but the size is in this age of progress against them, as they are little, if any, larger than the parent. Their period of maturity is at a later season, and we think one or two of them almost as desirable as Dana's Hovey.

THE NEW HARDY CLEMATISES.

We have long known, and ere this spoken, of the great merit of some new hybrids and varieties of Clematis recently raised, but we had no sufficient idea of their capabilities till we visited the nurseries of the raisers, Messrs. Jackman, of Woking, in the early part of this month. The Clematis is a well-known genus, often very pretty, from exhibiting a multitude of small flowers, like C. campaniflora; often showy, from a profusion of handsome ones, like C. montana; and frequently rampant, like the common Traveler's Joy; but it is only of late that it has become magnificent, or, rather, that its magnificence has been rendered available for flower-garden ornamentation and general use. There has long been a splendid species of Clematis (lanuginosa) in cultivation, with flowers of noble proportions, often six, seven, and eight inches in diameter. This, though finer as regards its size than any of the new ones, and having in addition to the normal blue form two exquisite snowy white varieties, was generally so slow to produce flowers, and leaves too, that it remained almost an unused plant. Hardy enough to do some good in nice positions, it was almost useless for general open-air culture. But, fortunately, Mr. Jackman succeeded in crossing a very hardy free-growing species with this lanuginosa, and the result is a breed with the vigor of a common Clematis and the large and splendid flowers of the lanuginosa. But the color was also changed: rich purplish and plum hues were imparted to the pale lavender-blue or white of lanuginosa, and some of the richest hues of purple to be found in any flowers are now displayed by the varieties of this race, while one or two of the new kinds are of a fine soft blue or mauve, with stiff petals and handsome form. Not only are they distinguished by immense size and the richest color, but their profusion of bloom is something quite remarkable. Imagine a mass of foliage five feet high, supported on stakes, bearing flowers nearly as large as tea-saucers, and so profuse that their leaves are quite obscured. We have seen the plants shown in pots and in a cut state, but had no idea of their profuse way of blooming, and consequently of their great value, till we saw them at home, growing in various positions in the open air, and flourishing there as freely as British weeds could do. They were arranged in various positions—planted in beds and pegged low down, like verbenas or ordinary bedding plants, or supported on stakes, up which they grew to a height of five feet or thereabouts, and then fell down in wreaths of the richest purple. However, few can have an idea of their beauty till they see them well grown. We believe them to be the noblest hardy hybrids that have been introduced for many years, and likely to effect much for the flower-garden, pleasure-ground, or rockwork. Being perfectly hardy, they are, of course, a great help in saving us from the perpetual expense for protection so much needed now. In fact, so satisfactory are they, that the only thing we have to settle about them is their position, and how they may be used most gracefully. Firstly, they will be of the highest value as purple bedding plants—our present colors in this way being poor indeed compared to these. They may be used effectively at about the same height, or a little higher, than the verbena; and near the earth, well pegged down in this way, they are less exposed to danger from storms, and enjoy a greater degree of heat. Eventually, a beautiful harmony may be presented by beds planted with them, if the various shades of purple, plum-color, etc., are associated in lines or circles; but it is needless to attempt the enumeration of the many ways in which they will be found effective and beautiful

when associated with other good things. To pass from their use as bedding plants, we have next to consider them as the noblest obtainable ornaments for low walls, trellises, etc. To such they must, of course, be nailed or tied; and, once firmly fixed, if allowed to fall down in rich masses, so much the better. We, however, consider that the most simple and grand use of all to make of them would be to plant them on large rockwork, giving them a good depth of rich, light, and sandy earth, and allowing their shoots to fall over the face of the larger rocks without training, pruning, or any other attention whatever. Of course, almost the same words will apply to rustic banks, etc., with a warm exposure. For, drooping over the margin of those raised beds with edgings of wood or stones, they will look superb.

As to soil, it is important to note that they do best of all in a very sandy light one. They will not refuse to grow freely in any good soil, not too stiff; but we have always observed them do famously in very sandy loam, and in any case in light stuff—deep as you like, however. Mulching the ground—or, in other words, covering it with an inch or two of loose, half-rotten manure during the summer—they like very much. It keeps the ground open and agreeably moist to the very surface. As to pruning, it is simply managed by cutting the plants back to within four or five inches of the ground in early spring—that is, if they are used for bedding, or in any way in which they may spread out low upon the ground. But when we wish to cover walls, etc., with them, the case is altered, and the stems may be allowed to go as high as they like, merely cutting them back and thinning them out a little. In banks, rockwork, etc., they might with advantage be left "to nature," no pruning, no attention being required after the first planting in good free soil. The best of the class of Clematises of which we speak, and it must not be confounded with any others, are C. Jackmanni and rubro-violacea. Both these kinds are now cheap. But since their appearance many new kinds have been raised, of which the best are Rubella, Prince of Wales, Lady Bovil, Thomas Moore, and Mrs. Bateman.—*The Field.*

[The Clematis needs only slight protection to endure the winter in our climate. See an article on the subject in "Woodward's Record of Horticulture."—Ed.]

REPLY TO AL FRESCO.

The article in the January number of the Horticulturist should have been headed Grape *Vine* Swindle. There is no fraud in the grape itself, although there has been in the sale of the vines, including both the quality of the vines and the wonderful fruits which they were promised to bear. So often have I been deceived, that I would hardly accept as a gift, with a pledge to cultivate, the most praised and highest-priced grape extant.

I like the idea suggested by Al Fresco, that amateurs should publish their experience, and I propose that they should also give their names and locality. The grape interest is of too great value to be crushed out anonymously.

During twelve years I have cultivated some sixty varieties of grapevines with great care. About fifty of these have been dug up and discarded as worthless; some would not ripen the fruit; some had the rot; others the mildew; many were too tender, and never made ripe wood. Among these last were a large number from the Patent Office, most of them, as I supposed, having a Southern origin, and not suited to a Northern climate.

Among the old varieties which never failed, year by year, never mildewed, never rotted, Hartford stands at the head of the list. I know that half a dozen years since I was ridiculed for entertaining such an idea; but it is orthodox *now* to believe

it. When cultivators could introduce some more worthless variety by sneering at the Hartford, they did so. You will see that I drop the word Prolific—all our cultivated grapes bear too much. I do not know one of them that is not improved in quality by taking off, in June, immediately after flowering, three fourths of the fruit. My rule is, *leave only one bunch upon a shoot.* With this treatment, and a disuse of the pernicious practice of summer pruning, which has been adopted so extensively, we can still have healthy vines and plenty of fruit.

The Hartford is an early ripener, perfects and ripens its wood for another year's fruit-bearing, and needs no protection in winter on the Hudson, where the degree of cold is often 15° below zero.

Here, then, is a native grape that is not a swindle. It has all the desirable characteristics of a good grape for this climate—not so fine as a Hamburgh or a Muscat grown under glass; but I find that my friends, who eat both, forego the latter when the Hartford is ripe, and invariably put the native in their pockets to carry home. It is, too, a good grape to sell, as it ripens early, and brings a good price.

The Clinton is a good wine grape, and as such worth cultivating. It has the good traits of hardiness and productiveness every year.

It is the rage at present to extol the Concord. With me, it rots like the Catawba. The fruit ripens about ten days later than the Hartford; the wood ripens to a healthy chestnut color; the vine is free from mildew, and endures the coldest winter. Where it does not rot, cultivate it.

The Isabella is too good to neglect. The mode of cultivation heretofore recommended was to trench and manure, keeping the vine in a sort of hot-bed, inducing great growth and full fruiting the third summer. The crop was then fine and ripened, but the vine was rendered worthless. Its next crop was mildewed, and the summer pruning made this a certainty. In my experiments for twelve years, under high cultivation, I find that the Isabella rarely has ripened wood for next year's fruit perfectly. The exceptions have been very hot and dry summers, when the wood growth has been very slow. In rainy seasons the growth is succulent and porous, spotted with mildew, and in this state the fruit remains unripe and sour; but by taking off three fourths the fruit that sets on a healthy vine, even if growing in rich ground, both fruit and wood ripen without mildew, and *that wood* will bear a severe winter without covering. May we not then infer that overfeeding, overbearing, and pinching (any pinching or tampering with green shoots or leaves is unnatural and too much) originate mildew? Mildew attacks a weak subject, and the vine is prepared for its attack by these weakening processes. I succeed best by not manuring young grapes, by giving them another year to mature, fruiting the fourth summer, and then permitting them to bear but small crops at first. Even after they are established, six bunches of grapes on a vine are worth more than twenty-four.

I guard all the green shoots and green leaves with care, thus giving the fruit all the leaf covering the vine can afford it. The grape is a modest fruit, and likes to hide away and nestle under the leaves until it approaches maturity, and it finds its own way, in some mysterious manner, into the sunlight at the proper time. The European system of treating the grape is not suited to our climate nor to native grapes. The sooner we discard it entirely, the sooner we shall be ready to begin anew and go right.

In our hot summers the foliage of our fruit-trees and vines is of inestimable value, both to keep the plant healthy and vigorous and to sweeten and ripen the fruit. It seems to me so self-evident as to need no argument. If we could begin all over again and avoid these errors, go back to good healthy vines for our stock, I believe we could again raise Catawbas on the

Hudson. But it is of no use to take the present diseased stock to work with, as we find that the seedlings of the Catawba have the same disease as their parent. This includes with me two varieties, Diana and Iona, which I have hoped would be exceptions.

Among the newer varieties are two, Creveling and Delaware, that prove hardy. The first has all good characteristics, and ripens so early that the wood always matures. But with both these varieties try the single-bunch theory, if you wish to have good fruit and plenty of it *every year*.

W. A. WOODWARD.

CORNWALL, N. Y., *January 20th*, 1868.

BEES.

BY JOHN JAY SMITH.

I HAVE been interested as well as amused by bee culture during a long life. Made to minister to man, the best examples of their utility are found in the tropics. In Cuba a cottager will have a hundred or more swarms, which are treated thus: a hollow log is set upon supporters two feet in height, and the log being open at *both* ends, the bees work to great advantage; a plan I would recommend for trial in this country; that is, to make two entrances to the hive, back and front. I have tried this to advantage in various experiments made years ago. As a result, I have not found bees very profitable, though they are companions whose society has always been among the minor pleasures of a garden.

But what I want to say, as a suggestion, is the following. I lately purchased an old farm on the Schuylkill River, of fifty acres, which had been in the occupancy of a single tenant for thirty years. The house is of wood, much the worse for age, and had been a really handsome country seat when the Schuylkill banks were not considered (as they really are) unhealthy.

Originally, the mansion was well built; the eaves, and indeed the whole structure, when I came into possession, were without paint, and had been so for a very long time. In the northwest corner, and in that of the southwest, swarms of bees had found small apertures, into which they entered—one, according to the tenant, thirty years agone, and the other about twenty years. Here they continued to live and perform their working duties till last year, 1867, when the old tenant of the farm, who had used up every particle of available soil, and all the trees, was displaced for a new and more intelligent tenant, who had heard his predecessor lament his inability to get at the supposed horde of honey which must have accumulated greatly. He was afraid of the stings!

Not so the new occupant. A few days since he went into the chambers, ripped up a flooring board, the weather quite cool, and was rewarded by such a quantity of fine old and new honey as surprised him greatly. Bucketful after bucketful awaited his labors, including bee bread, etc., *ad libitum*.

Now, what do we learn by this raid upon an old swarm? Simply this. There was not the slightest *perch* in either of the eaves for the bees to alight on; they arrived as regularly as bees do, alighted on the eave boards at a *very small* hole, and went their way rejoicing in the absence of the moth; and they had done this for twenty and thirty years! What does this teach? Undoubtedly, that a *perch*, which will also accommodate the great enemy of the bee colony, the moth, is unnecessary. The hint is given to bee fanciers, and should it be found, on further experiment, successful, a new era in bee culture may result. Two openings may also be tried with success.

GERMANTOWN, PHILADELPHIA.

THE COMMERCIAL ASPECT OF HORTICULTURE.

THE pleasing idea entertained by many of the uninitiated that this beautiful and agreeable pursuit is without its asperities may soon be dispelled by a casual glance at our periodical or serial literature. The admirer and lover of plants, fruits, and flowers, as objects of beauty and promoters of health, and the art and practice of culture of the earth as a noble exercise of the human faculties, can not at this busy period in the history of gardening advance very far in the study or pursuit of specialties without learning that there are little difficulties in the way, slight obstacles to be surmounted, and trifling irritants which they must learn to overcome or avoid.

If it were not so, horticulture would possess little charm for the enthusiastic amateur, and no man with severe commercial requirements should be content to follow plant-growing as a profession. Horticulture, then, has two aspects: one is so well fixed on the imagination of the civilized portion of society that it is the subject of universal admiration; the other partakes of the disappointments and reverses of other mercantile occupations, losing almost nothing of the displeasing and annoying elements so closely interwoven with commercial speculations.

For some years past we had presumed that the quiet and pleasing aspect of horticulture was quite lost in the ardor of trade speculations, for at every hand, wherever the amateur might turn, he was beset by the vendors of some "novelty" in the gardening line. These unpleasant importunities might in part be avoided by taking refuge in the "deep recess of some inaccessible village or sequestered spot" at least a few miles from the great agitator, the railroad. But, alas! our country has now few such retreats which are within the means or reach of the hopeful amateur, and not equally accessible to his horticultural friends, who with the most gratifying and commendable alacrity hasten to convey to him at his villa retreat the tidings of the latest blackberry, strawberry, grape, or potato acquisition.

It is very pleasant "to talk horticulture" with an enthusiastic amateur, even if of the male sex, and we must confess that we have met with commercial horticulturists whose conversation was at once interesting and charming. We seldom meet with these now—they belong to the past history of our business; or, if a few still linger out the latter days of their flowery life, they, too, have sought retirement, a little soured with the present commercial tendencies of the profession.

One other resort remained to the quiet-loving amateur of horticulture; while avoiding these annoying extremists, whose catalogues could not be scanned at one reasonable interview, so replete were they with striking novelties, we hoped to find comfort in the perusal of the "weeklies" and "monthlies," now so numerous, devoted with a *single eye* to the promotion of the art in all its beauty and purity; and thus without losing our interest in, or acquaintance with, our favorite study, might avoid the less pleasing details in which we could feel no interest.

But it would appear that the commercial enthusiasm has laid siege even to the horticultural periodicals, for we can scarcely open one of them without finding the most startling descriptions of new grapes, new strawberries, new blackberries, new raspberries, new potatoes, and, in truth, everything in the catalogue with the prefix "NEW" and "SPLENDID." But we are informed by those who have more skill and experience than ourselves, that only in the advertising pages are these to be found, and that they are as essential to the value of the periodical as the literary matter itself.

Well, we are again quieted, and we again peruse the last HORTICULTURIST with our former interest. Yet, behold, on page eight of the January number we meet with the heading "The Grape Swindle," and as we had secretly conjectured that there was something bordering on a "swindle" in the manner and tone of some of these great grapists, vinists, vignerons, viticola, and many other such pseudonyms, we set ourselves confidingly to read the complaint of "Al Fresco." We regret to say that we are compelled to assert that the case is not fairly, at least, but partially stated. Are there no swindles but grape swindles? What of new strawberries with fictitious value appended to them, not found alone in the advertising pages, but prominently indorsed by regular correspondents, some of them under assumed names of respected horticulturists, and others with descriptions which belie themselves.

But we are arrested in our condemnation of the periodicals by our prudent "friend," who urges that all our horticultural periodicals are not equally entitled to censure. Ah! that may be; we shall be more careful in our examination of their articles in future.

But our friend urges further—that a closer acquaintance with the entire subject of these "novelties," and the manner in which they are produced and brought before the public, would be requisite before taking the violent course of a wholesale condemnation of the novelty department of the nursery business. Are not the reputations of some of these dealers who offer high-priced and untested novelties for sale sufficient guarantee for five dollars, or ten, the price asked for a new grape or a dozen of the newest strawberries? This is at least a motion in arrest of judgment, and must be duly considered. S.

THE NEW JERSEY STATE AGRICULTURAL SOCIETY.

THE annual meeting of this Society was held at the Capitol, in the city of Trenton, on Wednesday, the 15th of January last, at eleven o'clock A.M. The meeting was fairly attended, a very large proportion of the stock represented, and was one of considerable interest. At the morning session the reports of the Executive Committee and the Treasurer were presented, and certain changes made in the by-laws of the Society; the afternoon session was mainly occupied in listening to a paper read by Mr. P. T. Quinn, on the subject of Fruit Culture in the State of New Jersey. This paper took a broad view of the whole subject, and was replete with valuable instruction, the result of a large experience by the author. The discussions and desultory talk which ensued on this and kindred subjects were full of interest, and such as mark these agricultural meetings and make them attractive.

The election for officers for the ensuing year was held at twelve o'clock noon, and was by ballot, resulting in the unanimous election of the following

BOARD OF DIRECTORS—Gen. N. N. Halsted, N. S. Rue, Col. R. S. Swords, Wm. M. Force, Benjamin Haines, His Excellency Marcus L. Ward, George R. Dunn, Peter H. Ballantine, Wm. H. McClave, P. T. Quinn, John Boylan, S. G. Sturges, Hon. Amos Clark, Jr., E. G. Brown, D. D. Buchanan, J. M. Pruden, J. S. Buckelew, H. D. Van Nostrand, W. G. Schenck, John Rutherfurd, T. W. Satterthwaite, F. W. Woodward, J. V. D. Hoagland, J. J. Irick, Benj. Acton, and Isaac R. Cornell at large.

At a subsequent meeting of the Board for Organization, held the same day, Gen. N. N. Halsted, of Hudson Co., was elected President; N. S. Rue, Esq., of Monmouth, Vice-President; Col. R. S. Swords, of Essex, Corresponding Secretary; William M. Force, Esq., of Essex, Recording Secretary; Benjamin Haines, Esq., of Union, Treasurer.

And in conjunction with these gentlemen, George R. Dunn, Esq., of Essex; Hon. Amos Clark, Jr., of Union; Wm. H. McClave, Esq., of Essex, were elected to constitute the Executive Committee.

As among the matters of most general interest, we quote from the report of the Executive Committee, which we regret not having space enough to insert in full. This report, after a comprehensive yet succint statement of the work of the Society during the past year, proceeds as follows: "And now it may be asked, What have we to do? Are we to rest on what we have already achieved? Are we to await in quiet expectation the coming round of another annual exhibition and trust to the results that may then be developed, and catch our inspiration from the hour? If such were our course, we should prove false to our responsible duties and to our high destiny. We must be up and doing. This is an age of progress—wonderful progress. We must either keep up with its march, or be left behind in useless obscurity. The advance in agricultural science, as compared with that of even the last generation, is truly wonderful. In nothing is this fact more strongly evidenced than in the agricultural implements of the day. Twenty years ago, the inventive genius of the country was displayed in forty-three agricultural implements patented in one year, while within ten months of the past year we have the amazing result of one thousand seven hundred and seventy-seven patents issued for such implements.

"Then, again, we see a sudden development of specific agricultural interests, almost incredible in amount, as, for instance, the hop crop. One State alone (Wisconsin) produced 7,000,000 lbs. during the last year, nearly doubling the crop of the previous year. The entire crop of the United States in 1860 was less than 11,000,000 lbs. The increase alone of Wisconsin last year was nearly equal to the total crop of the United States in 1850. So, again, among the fruits, as, for instance, the grape. The progress in the culture of the vine during the past year seems to have outstripped all previous ones. We had exhibited in the horticultural and pomological department of our own fair fifty varieties of native grapes by a single exhibitor. The estimates of the value of this one interest, in number of acres planted, and in the returns of the vintage, are almost too wild for belief. The Secretary of the American Pomological Society, whose means of knowing are better than those of most of us, places the value of our grape crop at a higher figure than that of France—the grape country *par excellence.*

"It is so, too, with various other interests. One county of our own State (Salem) furnishes the greater part of all the herdsgrass seed that is found in the market, and this, be it remembered, is chiefly the yield from lands which have been recovered by drains and dykes. They have sold from that county in one year 90,000 bushels of this seed. What an item of encouragement to other parts of the State to proceed in the work of reclaiming their waste lands!"

The report then proceeds to speak of a visit made by a delegation from the Society on invitation to Salem and Cape May, which seems to have been not only full of interest in a scientific view, but immensely enjoyable as a pleasure trip. After which, the report concludes as follows, which is indicative of the policy of the Society as a State association.

"Before we close a report in which we can touch but casually on the various points to be brought to your notice, we have a word to say on what has been the policy of your Committee in the government of the Society.

"First and foremost, your Committee have endeavored to keep constantly in view one cardinal principle, and ceaselessly to impress the same on the minds of our stockholders and all others with whom we have had dealings as a society, that is, that the New Jersey State Agricultural Society is

no county association, nor society of local interests, but is what its name imports, and what, if we are faithful to our trusts, we shall strenuously insist on keeping it, namely, a State institution, whose object and sphere is, in the language of our Constitution, '*to improve the condition of agriculture, horticulture, the domestic and household arts.*' We are to know no one interest to the exclusion of others, but to see that each of these has its due share of our patronage and fostering care. The strongest pressure our association will be subject to will be in behalf of the horse interest. This is perfectly natural. It is the most dangerous, because the most insinuating and seductive. It is a sad history in every agricultural society where they have allowed this interest to become paramount, that the society has gone to an early decadence, dwindling down into a mere race-course, languishing for a year or two, and then remembered only among the things that were.

"The horse is undoubtedly a noble animal, and as such is worthy our highest regard and utmost care. We can do everything in the way of encouraging improvement in breeding and in bringing into our State the finest blood of the country. We can go further than that, we can look to him as one of the attractive features in our annual exhibitions, and make him return to us in our revenues an equivalent for the care and pains bestowed upon him; but we must jealously guard against ever permitting this attractive and dangerous element so to encompass us as finally to be helplessly—and despite our own will—lost within its embrace. To some we may give offense by these words, or seem too slack in what the strong interests of the Society demand of us; but your Committee would say that nothing has exercised their minds more than this one subject, and we commend our views to the right understanding of impartial minds who are willing to give us credit, at least, for honest convictions and true intent."

The report seemed to give very general satisfaction, not only in assuring the minds of the purely agricultural members that the Society never could degenerate into a jockey club, but also in quieting the fears of some of the horse gentry that their favorite was to be tabooed.

PEACH BORER AND YELLOWS.

It may be interesting, as well as useful, to some of the Horticulturist readers to know of a safe and effectual method by which the fatal attacks of the peach borer may be prevented. Having tried all the plans proposed for the last five years—merely as an experiment upon neglected trees—I have found them all deficient in one thing, *i. e.*, in preventing a renewal of attack. Nine years' experience fully proves to me that the waste water of salt works, called "mother liquor," or "bitter water," is a sure preventive. I will not aver that it will kill the worm when once in the tree, as my experience is not conclusive on that point, but I do assert that it has killed them by thousands when partly in the tree and not entirely shielded by the bark. We apply it any time during the summer, but when possible, in June and last of August, putting about one pint of the liquid around the base of each tree. At the same time we wash the body and main limbs of the tree with the same liquid, which removes scales of dead bark and kills the eggs of insects.

My observations in the treatment of trees to this liquor leads me to declare it to be the most powerful agent in preventing the dreaded disease known as "yellows" that has yet been discovered. Trees in a rapidly declining state from the effects of this disease, being treated to this liquor, took on a new life as it were, casting their yellow leaves and throwing out an immense healthy foliage. John M. Jenkins.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and Publishing Departments, to F. W. Woodward, 37 Park Row, New York.

Mr. Editor: I have been engaged in grape-growing for about eight years, and during this time I have planted about fifteen acres. Out of the many kinds I have planted, I have had it constantly in mind to select a few out of them that had superior qualities over the rest, for table use and wine combined. Up to this time I have not made a final selection. When I look at *quality of fruit* only, I would take Delaware, Iona, and Herbemont as the three best for table use and wine. The first three years of my experience in grape-growing was on the Gasconade River, two miles above its junction with the Missouri. Here, the Delaware lost its leaves early in the summer; and the Herbemont winter-killed, even when covered. In the spring of 1864 I bought a tract of bluff land on the north side of the Missouri River four miles above the mouth of the Gasconade River. Here I planted mostly Norton's Virginia, Concord, and Delaware, and although it was only about four miles distant from my old vineyard on the Gasconade, the vines made such a vigorous growth that one could hardly distinguish the variety, especially the Delaware, which grew more like Concord, holding its leaves until frost. I planted a few Iona, Israella, and Herbemont for trial. I have since sold this tract of land to the Bluffton Wine Company, and planted another vineyard four miles farther up the river, on soil very much like it, on the banks of the Missouri, facing southeast, south, and southwest. I have planted mostly Norton's Virginia, Delaware, Iona, and Herbemont. All the varieties made a fine growth last season, and all held their leaves in a healthy state until frost, with the exception of the Delaware, which had small spots of mildew on a few of the leaves. The Herbemont does not winter-kill here, and I have made up my mind to plant largely of both Delaware and Herbemont in preference to Virginia and Concord. My experience with the Iona is only of three years' standing. I have planted several hundreds of the vines within this time, and find it healthy in leaf, and in vigor about like Catawba. I first tasted the grape three years ago, and I think I have seen no American grape equal to it in quality. Last fall I had a few bunches from the vines I planted at Bluffton, and I was confirmed in my first opinion of its superior quality. I should be glad to know to what extent this variety had been planted in this State, and with what success. My experience on this side of the Missouri, so far, confirms me in the opinion that the Delaware, Herbemont, and Iona will prove to be the three best varieties, both for table and wine, on thousands of acres along the north bank of the Missouri River. They will require more careful culture than Concord and Virginia, but they are enough better in *quality* to pay for the extra culture. Delaware and Iona have a poor name at Hermann and along the south bank of the Missouri; but I think our vine-growers are beginning to see that there is a great difference between the soil on the two sides of the river for certain varieties; and, heretofore, the reports from Hermann have had too much influence in leading others to discard such varieties as did not succeed well there. Our best-flavored varieties should be well tried in all locations before deciding to leave them

out and plant such as Concord, Hartford, Virginia, etc. I do not believe grapes of this quality will satisfy the taste of many, after they get more familiar with the Delaware, Iona, and Herbemont, and others of that class. For the past few years our grape-growers here have been crazy with the idea of *immense profits* from an acre, and the *quality* was of little account if it paid well. This can only be corrected by experience, which they are beginning to get. ——— J. S. H.

Imperatrice Eugenie Cherry.—This is a new cherry, as yet but little grown in this country. It, however, promises to become quite valuable, and especially West and Southwest. It is of the Duke family, size of May Duke, rich dark red, with a reddish flesh, tender, juicy, subacid, and ripening about the same time as the May Duke. ———

Pruning Trees in Spring.—When pruning trees in the spring, remember that for every bud or inch of wood you cut away, two more will be formed; and if you do not so cut as to throw the elongation from the last bud on the shoot left in an outward direction, your tree will soon be a mass of shoots and branches, and cause you to oppose any practice of pruning. On the other hand, if you carefully study the probable continuation of each bud left at the end of the shoot pruned, you can form your tree into a round, open, compact, or spreading head, according to your fancy. We could write a whole book on this item; but our belief is that a few practical words of guidance are all that is requisite to induce thought in the good common sense of our readers.

Mr. Editor: H. W. Sargent, Esq., in the *Gardener's Monthly*, deploring that America is the worst fruit-growing country in the world except the north of Europe, says: "I may say peaches and gooseberries are probably entirely unknown to children of ten years of age, though fifteen years since I grew them successfully."

I live within sight of Mr. Sargent's house, and although I can say but little of the peaches, I have had every year an abundance of gooseberries. The Downing, a high-flavored delicious fruit, the Mountain and the Houghton, are all American varieties, never mildew, are prolific bearers, and worthy of cultivation. I planted these many years ago to take the place of the Lancashire varieties, and they are very satisfactory; the children under ten knew where to find them in great plenty last summer. W. A. Woodward.

Winter Meeting of the Iowa State Horticultural Society.—From the record sent us, the meeting of this young State Society, held early in January, was numerously attended and the show of fruits quite large, numbering over two hundred plates of apples alone, besides grapes, pears, etc. We rejoice at this outcoming, as it were, of the knowledge and love of fruit-growing which that young State possesses. But we must beg to dissent from one line which the reporter or writer of the proceedings has incorporated, viz., "Eastern experience is of little avail to us."

If the writer thereof lives a few years, and makes fruit-growing his study, he will find that he was very far from the truth when he so wrote. It is the experience of those who have gone before us which must guide us in making progress. Without such reference and regard thereto we should only be repeating the errors that have been committed. Iowa is not so much a distinct climate or State, either in soil or temperature, that she can afford to throw aside the experience gained by the long and earnest labor of Illinois, Indiana, Ohio, New York, and New England. And while we accord her cultivators equal intelligence, we advise them to consult the records of horticulturists in other States.

We have no doubt of the success of fruit-growing in Iowa, but at the same time desire to say to those engaging in it,

do not count on success without very considerable labor and disappointment. We are glad to see the Society urge the extensive planting of trees, both fruit and ornamental. We have long considered this one of the leading items which should be impressed upon the minds of all fruit-growers, and especially of those in our new Western States.

The hardihood of varieties, we also notice, was slightly discussed, and the Early Harvest, heretofore considered tender, put down as "equally hardy with the Red June." We look for a radical change ere many years in all the foregone statements of such and such a variety becoming diseased, tender, bark bursting, etc., etc.

WILKINS, NEAR PITTSBURG, PA.

WILL you oblige a young florist by giving a list, in your valuable magazine, of the best annual flowers adapted for cutting in summer for bouquets, and selling in market? P. J. T.

[There are really few or no annuals that are just what we should consider desirable to meet the wants of our inquirer. Hardy shrubs or perennials would better answer his purpose; but if he must have annuals, we name the following as among the most desirable: Alyssum varieties; Phlox Drummondii varieties; Zinnia Elegans varieties; Calliopsis varieties; Candytuft, white and purple; and for the latter part of the season, Asters in their numerous varieties, all beautiful.]

AN ITEM FOR TREE-GROWERS.—Chas. Downing says that he once witnessed a remarkable change produced on the body of a pear-tree by means of wrapping it in straw. The tree was a Brown Beurre, grafted about seven feet high from the ground, upon a stock which for years had not grown as rapidly as the graft, and presented a very decided bulge or swelling at the junction of the graft. This smaller portion was encased in straw about two inches thick, and at the end of two seasons it was found on removing the straw that the contracted, or heretofore smaller, stem had swollen to the full size of the graft above, presenting but a slight indication of the point of union between graft and stock. This is an item of interest, and many tree-growers who have trees with contracted stems, evidence of some natural want of affinity with the graft, may find in it a hint for practical use. We have ourselves practiced wrapping the stem of Morello cherries, when worked at a height of two or three feet with the free growing or sweet varieties, with moss, and thus kept them swelling regularly with the growth of the graft for years.

AGRICULTURAL EDITOR OF NEW YORK WEEKLY SUN.—We note with pleasure that the New York weekly *Sun* has secured the services of our contributor and correspondent, A. S. Fuller, Esq., as its agricultural editor. While we are able to state that the HORTICULTURIST will retain Mr. Fuller among its contributors, we at the same time congratulate the proprietors of the New York *Sun* on having secured the services of a reliable and practical man thoroughly acquainted with his subject.

TERRE HAUTE (ILLINOIS) HORTICULTURAL SOCIETY.—At the annual meeting the following gentlemen were elected officers of the Society for the year 1868: President, H. D. Scott; Vice-President, Silas Price; Secretary, Jos. Gilbert; Treasurer, F. E. F. Barnes; Directors, H. D. Scott, Silas Price, Jos. Gilbert, F. E. F. Barnes, John G. Heinl, Wm. Patrick, G. W. Edwards, A. B. Pegg.

APPLES IN NORTH CAROLINA.—J. Lindley & Son, of New Garden, North Carolina, write they have two apples of great value, viz., "Golden Wilding," a roundish oblate, yellow, very good; tree, strong, upright, and thrifty, and a great bearer.

"Royal Limbertwig, large, roundish oblate, dull red, covering mostly a greenish yellow ground; great keeper."

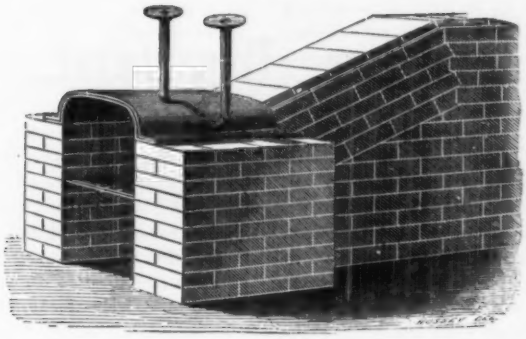

FIG. 37.—*Green-house Boiler.*

GREEN-HOUSE BOILER.—We have had several inquiries from our subscribers about a chief and efficient boiler for propagating purposes, to be used in connection with the common brick flue. Until lately we have been unable to find such a contrivance that was satisfactory to us. A short time since, while at the establishment of Messrs. Hitchings & Co., 81 Centre Street, we saw a small saddle boiler which seems to us to answer the purpose exactly. We have had an illustration made of it for the benefit of our readers who may desire such a contrivance to heat a propagating tank or small house connected with a general green-house through which the main flue can not be conveniently built. It will be seen from our engraving that the boiler forms the top of the furnace immediately over the fire, and that all its interior surface is exposed to the direct action of the burning fuel. The tank for bottom heat may be placed directly over the boiler, or the boiler may be connected by small pipes with a tank located in a back shed or other desirable position.

FARMER'S MANUAL.—I wish to recommend "Todd's Farmer's Manual." I think it ought to be in every farmer's library, and am sure no one will ever regret purchasing it, as it is an indispensable help in all branches of farming and mechanics.—J. H. R. in *Country Gentleman.*

NEW CANADIAN GRAPES.—From a little treatise on "Grapes, their Cultivation," etc., by D. W. Beadle, St. Catherines, C. W., we extract as follows: "*Laura Beverly.*—This is a new black grape, much resembling the Hartford Prolific in bunch, berry, and time of ripening, but of better quality. It was raised by the Rev. Alexander Dixon, of Port Dalhousie, in this county, and never has received any protection or special treatment. It has the merit of being perfectly hardy, a great bearer, ripening early, of good quality, free from pulp, and hanging perfectly on the bunch.

"*Silver Cluster.*—Originated with William Reed, County of Lincoln, is far superior to Allen's Hybrid or Rebecca, or any other white grape yet offered to the public."

BOOK NOTICE.

RURAL CHURCH ARCHITECTURE, published by Geo. E. Woodward, New York. Large folio volume. Price $12.

This work comprises a series of eighteen designs, twenty-eight elevations, and thirty-two plans of churches by the following eminent architects: Upjohn, Renwick, Wheeler, Wells, Austin, Stone, Cleveland, Backus, Reeve, etc. The designs are printed in colors, and all drawings are made to a working scale. Carpenters, builders, architects, and building committees will find this book a valuable aid.

Poultry Department.

CONDUCTED BY A. M. HALSTED.

CREVECŒUR FOWLS.

Our experience with Crevecœur fowls during the past year having been solicited from many parties, we present it in this form.

On February 19, 1867, we received from Europe *two cocks* and *six hens*, and on March 25 *two more hens*. One of these last was sick when received, and died on April 2. The first egg was taken in March 4.

On the 20th of the same month we commenced an accurate account of the number of eggs received daily. At that time we were taking in *four* eggs per day. On September 20—six months—we footed up

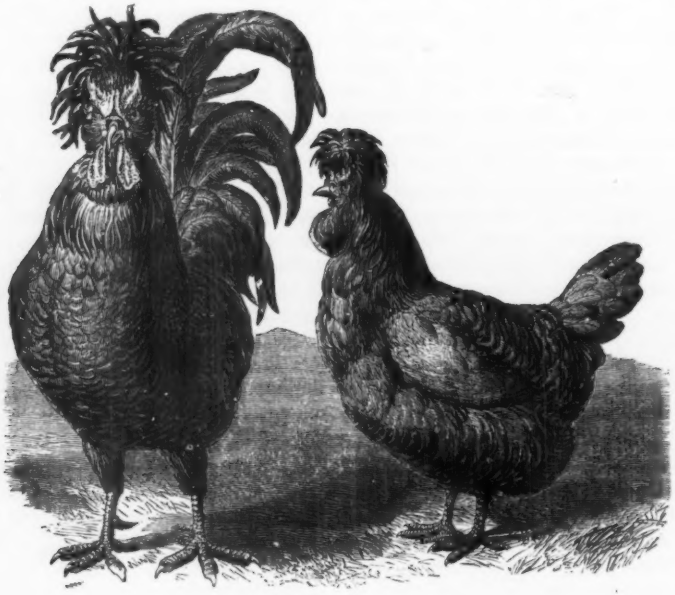

Fig. 38.—*Crevecœur Fowls.*

Drawn from Life, from Fowls Imported by A. M. Halsted, Rye, N. Y.

the account, and had received 1,084 eggs, or an average of *nearly* six eggs per day for six months. During the next month—to October 20—we received 155 eggs, and from that time to November 20, 71 eggs, making a total of 1,310, of which an account was kept. During the early part of March we probably took in 25 eggs, and *after* Nov. 20 about 40 more, which would make the entire number laid during the year, or, rather, in *nine months*, 1,375—an average of *almost* 200 eggs per hen.

During the whole season, not one of the hens showed the least disposition to sit; and but *one* was sick, which was from the breakage of an egg in the ovary, and was cured in about ten days.

During the past severe weather of this winter the fowls have had no more protection than our Brahmas, Cochins, Games, and other fowls, and seem to have borne the cold weather better than all, except the Cochins, Games, and Houdans, all of which seem about equally hardy.

We had been told that the Crevecœurs were especially tender in this country at the age of six months, and would be almost certain to die off at about that age; but were pleased to find that our fears were groundless. We have lost but one fowl since they were four months old, and attribute that as much to neglect as sickness.

As to their table qualities, we can speak only from hearsay. Those who *have* tried them here, and friends and relatives who have tried them in Europe, pronounce them superior to anything of the poultry kind ever before eaten. In regard to the *eggs*, we *can* speak. There is a peculiar fineness of grain and delicacy of flavor found in no other egg. We have repeatedly had them *poached*, with other varieties on the same dish, and could invariably tell the Crevecœur from any and all other varieties by the *taste* alone.

The eggs are very large, and shell rather inclined to be thin, as is generally the case with pure-bred fowls. The fowls themselves are large and handsome, and are an ornament to any poultry yard, as well as being of great utility. We append a brief description, plumage, etc.

Plumage, brilliant black, sometimes a little golden or silver tinged; a large and beautiful crest; large two-horned comb, sometimes toothed; close and thick beard, and handsome pendant wattles of a brilliant red color. The neck is of medium length, well arched, and covered with a very thick glossy hackle. The legs are black or slate color, short, and free from feathers. The thighs are large and fleshy, supporting a long and square body, with a broad, full breast, and rather large, closely-set wings; the tail is full and well sickled, altogether giving them a very upright, handsome carriage. They are very tame, ramble but little, and seem better contented at home than wandering afar off. They are great layers, eggs are very large, and they continue laying a long time. They mature very early, and are fit for the table at three and four months old; frequently weighing 6½ lbs. when well fatted. Non-sitters.

COMMON vs. FANCY FOWLS.

No. 2.

Probably every farmer who has had the chance of observing, as well as others whose attention has been called to the matter, will acknowledge the superiority of Southdown mutton over a common mongrel carcass, and also the preference in favor of a good shorthorn bullock for the shambles over a Western steer with the blood of a hundred or less mongrel stocks in his veins. Certainly your butcher, if he understands his business, will tell you at once which is accounted the most valuable; and if said butcher's patrons order *Southdown* mutton, and examine their pass-books, they can see for themselves, and feel also, financially, the difference in value. And yet these same persons—farmers, citizens, or others—are very slow to acknowledge that there is any difference between one fowl and another.

A chicken is a chicken, whether it weighs 2½ lbs. at maturity or 10 lbs.; whether it is tender or tough. And an egg is an egg: large or small, delicate in flavor, or tough and rank.

"You *can't tell me* anything about fowls; why, I raised them before *you* were thought of." *That's so;* and before steam was thought of as a motive power—before the lightning was tamed—before steel fingers worked our button-holes and made our

pantaloons, etc. And you raise the same old kind yet, don't you?—because your great-grandfather's grandmother did. And you get from 25 to 40 eggs a year from each hen, don't you—because your great-grandfather's grandmother did. And you let them roost under the hovel and sheds, and dirty up your carts, wagons, plows, etc., allowing *dollars'* worth of the most valuable manure you have on your farm to go to waste—because your great-grandfather did.

Well! how much money do you *make* by doing just what your above-mentioned venerable ancestor used to do?

That is a *practical* view of the question. How much money do you *lose* by keeping and feeding fowls that lay 50 eggs per year, instead of 150?—by breeding fowls that weigh 3 lbs. to 5 lbs. each, instead of those that weigh 6 lbs. to 8 lbs.? Just think this over until next month, and then we will "talk to you some more."

KEEPING FOWLS IN ORCHARDS.—The public has yet to learn the full advantages of keeping poultry. Few seem to appreciate the service they may do among the trees in an orchard. Let any one try them in an orchard of a quarter or half an acre, where they may be kept by picket fence, four or five feet high, putting in say one hundred and twenty-five fowls, and observe the result. He will avoid the annoyance in the garden of which so many complain, while they will work among the trees, doing just what is needed, keeping the ground well cultivated, and destroying everything that can injure the fruit-trees in the shape of bugs, worms, or other insects, and lay a large number of eggs, which are a cash article, to say nothing of the chickens, which pay well for raising at the present time.

I have tried it, and I know it is so. I have about one hundred fowls, which have worked admirably among my trees, keeping the ground in good condition, keeping off the insects, and promoting the growth of the orchard. I am satisfied that we have yet to learn the full benefits which may be derived from the proper management of fowls, and it is quite possible that the method I have suggested may offer the best way of getting our apple orchards into bearing condition again.—*Cor. Northern Farmer.*

POULTRY RAISING AND PROFITS.—From Moore's *Rural New Yorker.*—John Crane, Schuyler Co., N. Y., writes: "I send you the results of my experience in rearing the Brahma variety of fowls, with my expenditures, receipts, and profits, for insertion in your paper. The length of time embraced in the following statistics was one year, commencing Nov. 18, 1866, and ending Nov. 18, 1867. The number of fowls at the first-mentioned date was 18 hens and 2 roosters, being the same number as left on hand at the last-mentioned date. The account stands thus:

Cost of keeping the old fowls	$15 45
Cost of rearing 90 chickens	19 70
Total expense	$35 15
Number of eggs sold, at 35 cents per dozen—155 5-12 dozen	$53 39
Sold fowls to the amount of	55 57
Total receipts	$108 96
Expenses as above	35 15
Nett profit	$73 81

CORRESPONDENCE.

E. S. B., of Broome County, N. Y., asks, "What is the peculiar excellence of the Bronze Turkey? how heavy do they get?"

First. They are more hardy, easier to raise; they do not roam so much as the common turkey; they are double, treble, and sometimes quadruple the size of the common, and are also more tender in flesh, besides being a much finer flavored bird for the table.

We have *seen* turkeys that weighed upward of 40 lbs., and know of a number that have weighed over 50 lbs. Andrew Johnson had a present of an old gobbler for his New Year's dinner that dressed *over* 50 lbs. We own a gobbler, seven months old, weighing 25 lbs., and a hen turkey weighing 22½ lbs.